

Clinical Trial Protocol

Iranian Registry of Clinical Trials

20 Jul 2026

The Effecte of foot orthosis on pattern and electromyographic activity of ankle muscles in collegiate athletes with flat foot during single leg jump landing

Protocol summary

Summary

The aim of this study was to compare pattern and electromyographic activity of ankle muscles in athletes with flexible flat foot during single leg jump-landing task in two situations with and without foot orthoses. These research design is semi-experimental due to exist intervention variable. The population of 18-23 year-old male students study all athletes are at Tehran University, among these athletes, 15 athletes from the disciplines of volleyball, handball and basketball with flexible flat foot deformity due to the targeting criteria for a sample these were selected. Exclusion criteria from the study of ankle sprains in the past year, lower extremity surgery or lower extremity fractures, ligament or meniscus injuries in the knee, pain in the lower extremities before and during the trial, systemic diseases such as rheumatoid arthritis and diabetes, history of use any type of foot orthoses.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2016031626661N1**

Registration date: **2016-03-16, 1394/12/26**

Registration timing: **retrospective**

Last update:

Update count: **0**

Registration date

2016-03-16, 1394/12/26

Registrant information

Name

Mohammad Reza Badihiyan

Name of organization / entity

Tehran University

Country

Iran (Islamic Republic of)

Phone

+98 21 6111 8821

Email address

mbadihiyan@ut.ac.ir

Recruitment status

Recruitment complete

Funding source

Corrective Exercises Laboratory- Faculty of Physical Education- Tehran University and Personal researcher funds.

Expected recruitment start date

2015-05-22, 1394/03/01

Expected recruitment end date

2015-06-22, 1394/04/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The Effecte of foot orthosis on pattern and electromyographic activity of ankle muscles in collegiate athletes with flat foot during single leg jump landing

Public title

The Effecte of foot orthosis on electromyographic activity of ankle muscles during single leg jump landing

Purpose

Prevention

Inclusion/Exclusion criteria

Inclusion criteria: the population of 18-23 year-old male students who exercise at least three years' experience in the fields of volleyball, handball and basketball respectively; flexible flat foot deformity (hyperpronated ankle) in both feet. Exclusion criteria: ankle sprain in the

past year; lower extremity surgery or lower extremity fractures; knee ligaments or meniscus injuries; pain in the lower extremities before and during the trial; systemic diseases such as rheumatoid arthritis and diabetes; history of using any type of foot orthoses.

Age

From **18 years** old to **23 years** old

Gender

Male

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **15**

Randomization (investigator's opinion)

N/A

Randomization description

Blinding (investigator's opinion)

Not blinded

Blinding description

Placebo

Not used

Assignment

Single

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

University of Tehran

Street address

North kargar st. -Faculty of physical education and sport sciences

City

Tehran

Postal code

Approval date

2015-03-11, 1393/12/20

Ethics committee reference number

8795372

Health conditions studied

1

Description of health condition studied

Flexible Flat Foot

ICD-10 code

M21.4

ICD-10 code description

Flat foot [pes planus] (acquired)

Primary outcomes

1

Description

Timing of EMG activity

Timepoint

Immediate

Method of measurement

Surface EMG - ms

2

Description

EMG activity

Timepoint

Immediate

Method of measurement

Surface EMG - %MVC

Secondary outcomes

empty

Intervention groups

1

Description

In people with flat foot deformity to correct and support foot arch, rigid or semi-rigid foot orthosis may be recommended. In these study used a semi-rigid prefabricated foot orthoses with medial longitudinal arch that's inclusive of two harder EVA (Ethylene Vinyl Acetate) layer at below and a surface layer is made of softer leather layer. In addition, this foot orthoses have a metatarsal pad to support foot transverse arch. The benefits of this type of foot orthoses include of durable, affordable and save time (no need for molding) that lead to its widespread use in orthotics clinics. It is generally accepted that the orthotics are effective on the sensory input of foot mechanoreceptors, these effects could increase or decrease their foot sensory feedback.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Corrective Exercises Laboratory- Faculty of Physical Education- Tehran University

Full name of responsible person

Dr Reza Rajabi, Professor, Department of Sport Medicine, Faculty of physical education and sport sci

Street address

North kargar st. ,Faculty of physical education and sport sciences

City

Tehran

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Department of Sport Medicine, Faculty of physical education and sport sciences, Tehran University

Full name of responsible person

Dr Hooman Minoonejad, Professor, Department of Sport Medicine, Faculty of physical education and sport sciences

Street address

North kargar st., Faculty of physical education and sport sciences

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Tehran

Grant name**Grant code / Reference number****Is the source of funding the same sponsor organization/entity?**

Yes

Title of funding source

Department of Sport Medicine, Faculty of physical education and sport sciences, Tehran University

Proportion provided by this source

100

Public or private sector

empty

Domestic or foreign origin

empty

Category of foreign source of funding

empty

Country of origin**Type of organization providing the funding**

empty

Person responsible for general inquiries

Contact**Name of organization / entity**

Department of Sport Medicine, Faculty of physical education and sport sciences, Tehran University

Full name of responsible person

Mohammad Reza Badihiyan

Position

MSc In Corrective Exercise & sport Injuries

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Person responsible for scientific

inquiries

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Faculty of physical education and sport sciences

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Web page address

Sharing plan

Deidentified Individual Participant Data Set (IPD)

empty

Study Protocol

empty

Statistical Analysis Plan

empty

Informed Consent Form

empty

Clinical Study Report

empty

Analytic Code

empty

Data Dictionary

empty